

Modelling and analyzing dynamically complex social systems – discovering System Dynamics

Training week for young social scientists offered by the University of Berne, November 7 – 11, 2005

<p>First course day Monday, 7.11.2005 9.15 a.m. – 16.30 p.m. ☛ Room A 122, KWB, Schanzeneckstrasse 1, 3001 Bern</p>

Syllabus and tentative schedule

Date	Part 1	Part 2
Monday	Getting known each other, Overview workshop and introduction,	Maps and models Principles of mapping and modeling, Validity, Different approaches to modeling
Tuesday	Understanding structure: Stock and flow, Feedback loops, Ratios, Impacts	Understanding dynamics: Bathtub dynamics, Feedback loop dynamics, Sensitivity analysis
Wednesday	Model formulation: Reinforcing processes, Balancing processes, S-shaped processes	Model formulation: Overshoot processes, Oscillatory process
Thursday	Policy analysis: Leverage point and trade offs	Conversational systems thinking: Reference mode, Accumulation points, Feedback loops, Time horizon
Friday	Group model building	Group model building

Reading list

☛ **Papers can be downloaded from the IKAÖ-Homepage:**

Mitteilungen - Training week - Modelling complex social systems – papers

(an handout including these papers will also be provided in the beginning of the course)

- Ackermann, F., S. Howick and D. F. Andersen (2004). "Stirling revisited: Practical approaches to merging two system thinking streams." Proceedings of the 21st International Conference of the System Dynamics Society.
- Andersen, D. F. and G. P. Richardson (1997). "Scripts for group model building." System Dynamics Review 13(2): 107-129.
- Andersen, D. F., G. P. Richardson and J. A. M. Vennix (1997). "Group model building: adding more science to the craft." System Dynamics Review 13(2): 187-201.
- Martinez-Moyano, I. J. and G. P. Richardson (2002). An expert view of the system dynamics modeling process: Concurrence and divergences searching for best practices in system dynamics modeling. Proceedings of the 20th International Conference of the System Dynamics Society, Palermo, Italy (July 28 - August 1).
- Rahmandad, H. (2004). "Heterogeneity and network structure in the dynamics of contagion: comparing agent-based and differential equation models." Proceedings of the 22nd International Conference of the System Dynamics Society.
- Sterman, J. D. (1991). A skeptic's guide to computer models. Managing a Nation: The Microcomputer Software Catalog. G. O. B. e. a. Boulder, Westview Press: 209-229.
- Sterman, J. D. (2001). "System dynamics modeling: tools for learning in a complex world." California Management Review 43(4): 8-25.

Contact

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